Rape and sexual assault

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Sexual violence is a global problem. The lifetime risk of attempted or completed rape is up to 20% for women, but men and children are also often sexually violated.[1] Sequelae include unwanted pregnancies; sexually transmitted infections, including HIV; depression; and post-traumatic stress disorder. Most of the literature on rape and sexual assault is retrospective, but we aim to provide an evidence based review of their management.

Who is sexually assaulted?

Anyone can be sexually assaulted but some people are especially vulnerable, such as adolescents and young women, people with disabilities, poor and homeless people, sex workers, and those living in institutions or areas of conflict.[1] Consumption of alcohol is commonly linked with sexual assault,[2] although covert administration of drugs seems to be unusual.[3 w1] Perpetrators are usually one or more males known to the victim and often motivated by power and control; many women experiencing domestic violence also endure forced sexual activity.[4] In Britain fewer than 20% of people who have experienced sexual violence report it to the police.[4] People often seek medical help shortly or rather later after sexual assault, although they may not disclose the reason for their presentation.

Legal definitions of sexual offences vary internationally. Practitioners should be aware of local legislation and practice so that their actions do not compromise further investigations and court hearings. In England and Wales the law was comprehensively revised in the Sexual Offences Act 2003. Rape is defined as the non-consensual penetration of the vagina, mouth, or anus, by a penis; both sexes can be raped. Assault by penetration is the non-consensual, intentional insertion of an object other than the penis, into the vagina or anus. Specific offences relate to children.

What is the initial management?

Care should be guided by the individual's wishes and needs and provided sensitively in a coordinated and timely fashion to avoid the need for attendance at multiple services.[5] Considerations after recent assault include treatment of injuries, preservation of evidence, prevention of unwanted pregnancies and sexually transmitted infections, and psychosocial support. Descriptive studies have found that most women and men reporting rape prefer to be examined by a woman.[6]

How can services be accessed?

Sexual assaults are often first reported to the police. Many forces have officers with specialist training who can provide excellent initial care and facilitate access to further services such as sexual assault centres: specialist services providing around the clock forensic examinations, other medical and psychological services, and aftercare in a secure and sensitive setting, thereby increasing access to support and services.[7 8] As well as seeing people who have been referred by the police, sexual assault centres may also see people referred by other agencies and self referrals[w2] and can collect information and evidence anonymously to assist in identifying serial rapists.

Treatment of injuries

Descriptive studies have reported injuries in about half of people reporting sexual assault, with non-genital injuries more common than genital injuries.[9 10 w3] The absence of genital injury does not imply consent or exclude penetration, even in women who deny previous sexual activity.[10] Injuries are usually minor but should be documented and may need treatment. Major trauma—for example, head injury—is uncommon but may be life threatening and so its management takes precedence over forensic examination. Victims with significant vaginal or anal bleeding after penile penetration or assault with a foreign body should be assessed in an acute hospital setting with resuscitation facilities and where examination under anaesthesia and operative repair are possible.

Why and how should evidence be collected?

Good documentation and preservation of evidence are essential for assisting judicial processes necessary to prosecute perpetrators. People who have been raped should be asked whether they would like to report the

Sexually transmitted infections for which screening should be offered after sexual assault

- Gonorrhoea
- Chlamydia
- Trichomoniasis
- Syphilis
- HIV
- Hepatitis B

Sources and selection criteria

We searched Medline using the term "sexual assault". We also took account of the Cochrane review of interventions for emergency contraception and for trauma related symptoms and the prevention of post-traumatic stress disorder. Guidance from the National Institute for Health and Clinical Excellence and national and World Health Organization guidelines were also considered. We searched our personal archives of references and consulted experts.

assault to the police and undergo a forensic examination. Evidence dissipates rapidly in vivo and so even before forensic examination the collection and careful labelling of samples should be considered. Urine may provide information about drugs and alcohol. Mouth samples may yield spermatozoa for up to 31 hours[w4]; ideally no drink or food should be consumed before samples are taken.[11] Injuries may yield valuable evidence and cleaning or washing wounds should be deferred until forensic examination, unless clinically essential. Other samples that may provide crucial evidence are condoms and tampons, sanitary towels, panty liners, and chewing gum.

Why do a forensic examination?

If the person who has been assaulted wishes to report it to the police, or to a sexual assault centre, further evidence can be collected at forensic examination. This should be carried out promptly by a clinician with specialist training, ideally in a forensically secure environment to avoid DNA contamination. The examination should be detailed but sensitive to document all injuries (fig 1) and to collect samples such as body fluids from the genitals and elsewhere on the body using swabs. In women DNA evidence is unlikely to be found later than seven days after the assault or three days in the case of men and children, but examination for injuries may still be worthwhile.[11] [w5]

A patient's story

I was walking my dogs on the common as usual one day when I was raped.

It was hard to admit it to myself, never mind complete strangers. Facing possible death at knifepoint had a profound effect and left me, literally, paralysed with fear and powerless to fight back. Total loss of control, but little physical evidence of assault, was harder to accept than being beaten into submission.

Fortunately the first person I told—a police officer—believed me, otherwise I might not have been able to tell anyone else. He arranged for me to attend a sexual assault centre, where I received sensitive care from professionals who understood the effects of extreme fear and trauma. They neither doubted nor judged but gently treated present and potential physical problems. Subsequently I was given an invaluable arena to discuss personal consequences of the assault, which those close to me could not bear to hear. While others saw me as unable to think for myself, the staff encouraged me to make my own informed decisions. Trusting in myself was crucial in restoring my sense of self worth.

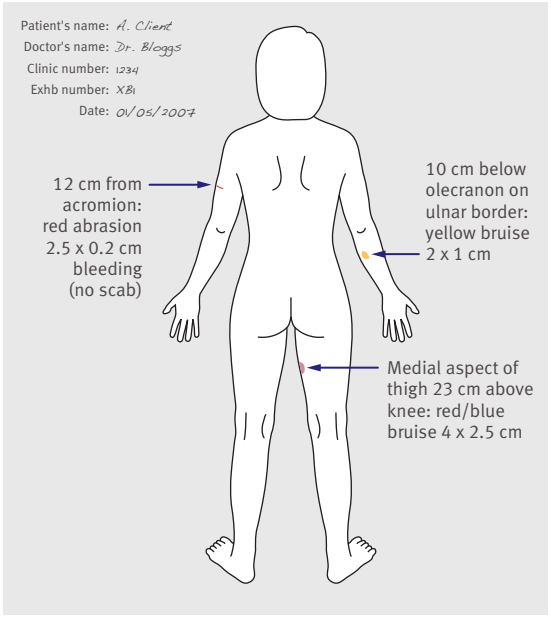

Fig 1 | Recording injuries on a body diagram

Contraception

The risk of pregnancy after rape is about 5%, with adolescents most at risk.[12] A multicentre randomised trial showed that emergency contraception with a single 1.5mg dose of levonorgestrol (Levonelle 1500; Schering Health Care) is effective up to five days after intercourse.[13] [w6] Alternatively an intrauterine device can be inserted up to five days after the earliest predicted date of ovulation in that cycle.

Sexually transmitted infections

The frequency and type of sexually transmitted infections acquired from sexual assault depend on their local prevalence and the nature of the assault. Chlamydia and gonorrhoea are common and may lead to pelvic inflammatory disease and infertility in women if untreated. Nucleic acid amplification tests for chlamydia and gonorrhoea can be carried out on urine samples rather than cervical swabs, minimising the need for intrusive examinations using a speculum.[w7] A positive test result should be confirmed by an additional test if used for medicolegal purposes.[w8] [w9] People who have been raped are often reluctant to attend for screening but one test alone may miss infections, especially if carried out too early. An alternative is to offer prophylactic antibiotics against bacterial sexually transmitted infections, often single dose treatment but advised by national or local protocols.[14] [w10] This is well tolerated,[15] although its effectiveness has not been fully evaluated.[14] An

UNANSWERED RESEARCH QUESTIONS

Can education reduce the incidence of sexual assault? If so, what strategies are effective?

What is the impact of early interventions and specialist services such as sexual assault centres on reducing longer term psychological and physical morbidity?

How can adherence support be most effectively provided to survivors taking post-exposure prophylaxis against HIV?

What is the optimal configuration of sexual assault services for men who have been sexually assaulted?

accelerated course of hepatitis B vaccine should also be considered.

Post-exposure prophylaxis against HIV

The risk of acquiring HIV depends on the local prevalence of the infection and the nature of the assault; although its prevalence is generally low in developed countries it may be much higher elsewhere, especially in areas of conflict.[16] Risk assessment is subjective and difficult, as it is usually impossible to determine whether the alleged perpetrator is infected with HIV (fig 2). Epidemiological studies indicate that high risk assaults are those including anal rape, trauma (including that resulting from sexual violence), bleeding, defloration, or multiple assailants, and that high risk assailants are those known to have HIV or risk factors such as injecting drug users, men who have sex with men, or those from a high prevalence area for HIV.[17]

Evidence from a retrospective case-controlled study[w11] and prospective data[w12] suggest that post-exposure prophylaxis against HIV after sexual exposure could reduce the risk of HIV acquisition after sexual assault by about 80% if given as soon as possible—ideally within 24 hours—and continued for 28 days. Pathogenesis studies indicate that it is unlikely to be beneficial if started after 72 hours.[17] Evidence for the relative effectiveness of different combinations is lacking, but safe and tolerable drugs are preferred.[w13] In the United Kingdom, generally three drugs are recommended,[17] costing about £600 (€880; $1197). Treatment for 3-5 days can be provided initially as many people choose not to continue. Subsequent follow-up should be under the supervision of a clinician with experience of HIV and should include adherence and other support and follow-up testing for HIV.

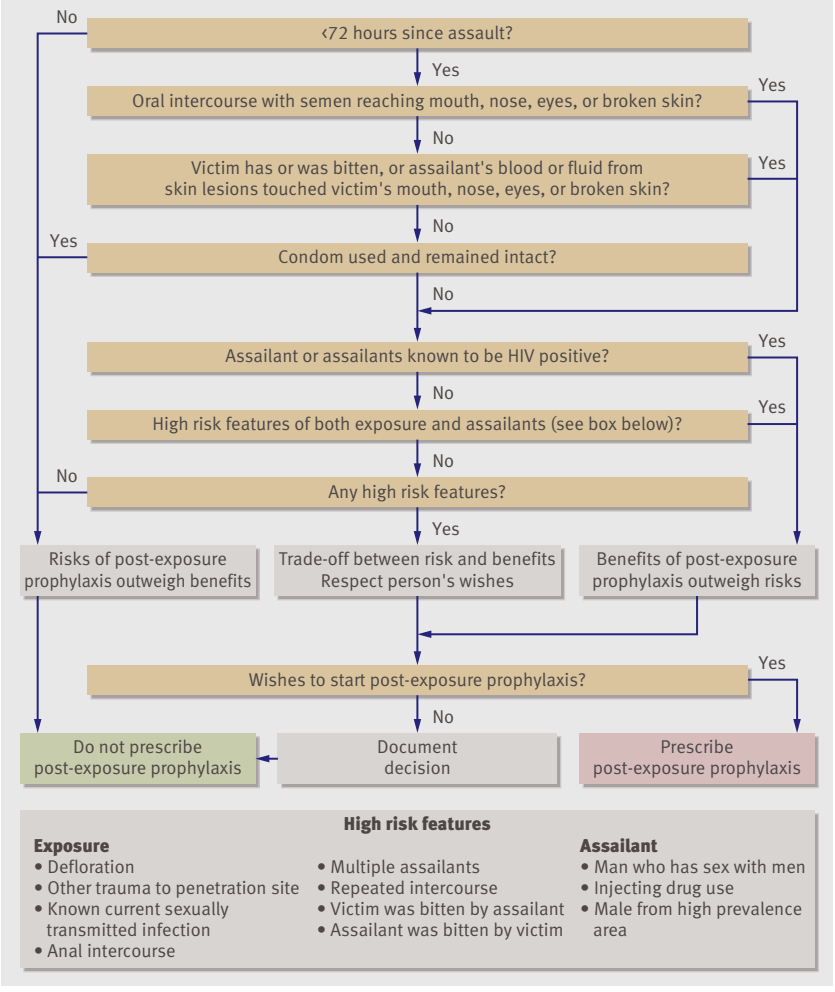

Fig 2 | Decision chart for post-exposure prophylaxis against HIV after sexual assault. Adapted from chart created by Martin Wiese, Leicester Royal Infirmary

When to consider post-exposure prophylaxis against HIV after rape

Assailant HIV positive
Assailant with risk factors
Assault within 72 hours
Anal rape
Trauma and bleeding
Multiple assailants

What are the psychosocial factors associated with sexual assault?

The psychological and social impact of sexual assault can be profound. Elements contributing to post-traumatic responses include the personal meaning of the trauma, perception of (not actual) life threat, actual

Risk of HIV transmission after sexual assault

Risk of transmission=risk that source is HIV positive×risk of exposure[17]

Examples

Woman raped by man from high prevalence area*:

1 in 14 (his chance of having HIV)×1 in 1000 (risk of vaginal intercourse)=1 in 14000†

Man raped by three homosexual men in London:

1 in 7 (chance of each assailant having HIV)×1 in 33 (risk of receptive anal intercourse)=1 in 231 for one man×3=1 in 77*

*HIV prevalence figures available at www.who.int/hiv/en/

†Risk increased by trauma and bleeding

injury, being the victim of a completed rather than an attempted rape,[18] and repeat traumatisation. Psychological reactions vary greatly, but overall people who experience rape are more likely to develop post-traumatic stress disorder than victims of any other crime.[w14]

In the early weeks after sexual assault most people experience strong emotional reactions and express a range of post-traumatic symptoms. Other early symptoms include anxiety, tearfulness, self blame and guilt, disbelief, physical revulsion, and helplessness. About half[19] recover from the acute psychological effects by 12 weeks but in many symptoms persist for years. About 17% develop disabling mental health and social problems.[w14] Longer term difficulties include post-traumatic stress disorder, generalised and phobic anxiety, depression,[w15] difficulties with social adjustment and sexual functioning,[20] and substance misuse. Feelings of shame and humiliation are common and persistent and contribute to low self esteem and depression. Levels of suicidal ideation and attempted and completed suicide among people who have been raped are significant.[21]

Early intervention is often indicated for distress, although randomised controlled studies indicate that psychological debriefing may harm rather than benefit.[22 23] Key elements are education (including written information); a space to ventilate and explore anger; reduction of shame and guilt; and consideration of coping mechanisms, sexual matters, and social support and integration. Support in a safe environment can be provided by sexual assault centres, victim support and rape crisis services, and general practitioners, as well as families, friends, and partners. Coordinated community based programmes, studied using a qualitative multiple case study design, have been found to benefit people who have been raped[24] and may be more acceptable than health services for some.

Although most people recover spontaneously, treatment of clinically significant psychopathology is essential. General practitioners have an important role in identifying those requiring formal treatment and ensuring follow-up, given the risks outlined and frequency of avoidance symptoms. Management guidelines for post-traumatic stress disorder[25] indicate that people should be offered trauma focused psychological treatment (cognitive behaviour therapy or eye movement desensitisation and reprocessing), regardless of the time since the trauma. If no noticeable improvement results, clinicians should consider an alternative psychological therapy or drugs. Antidepressants are indicated for prominent depressive symptoms or a distinct depressive illness. Short term use of hypnotics and anxiolytics may be beneficial for hyperarousal in the immediate aftermath. Management may be more complex in those with repeat traumatisation, when referral to a specialist centre should be considered.

SUMMARY POINTS

- Rape and sexual assault are common, particularly among young women although men and children may also be assaulted
- Perpetrators are usually known to those they assault
- People who have been sexually assaulted often seek medical help but may not disclose the assault
- Management includes treatment of injuries; emergency contraception; prevention of infections, including HIV; and psychosocial support
- Although many people experience psychological symptoms after rape, most recover
- A minority of people after assault have significant and disabling persistent symptoms that require specialist intervention and active treatment
- Collection of evidence may be crucial in identifying and prosecuting perpetrators
- Optimal acute management is the provision of all necessary services in one place and in a sensitive, safe, and forensically secure environment

Additional educational resources

World Health Organization, Geneva (www.who.int/violence_injury_prevention/publications/violence/med_leg_guidelines/en/)

Guidelines for medicolegal care for victims of sexual violence, 2003

M Dalton, ed. *Forensic gynaecology*. London: RCOG Press, 2004

A textbook outlining the medical, psychosocial, and legal aspects of rape and sexual assault of females

Nuttall M. *It could have been you*. London: Virago Press, 1998

Account of an assault and its aftermath by the person assaulted

Useful websites

Rape Crisis Network Europe (www.rcne.com)

Provides information about counselling, legal services, and support services in over 30 countries

NHS and Metropolitan Police (www.careandevidence.org)

Provides training, and other resources such as flowcharts and a free DVD, in the care of and collection of evidence from people who have been sexually assaulted, for healthcare professionals

UK Trauma Group (www.uktrauma.org.uk)

Contact information for UK health professionals about specialist resources, advising on the assessment or treatment of people with psychological reactions to major traumatic events

Information for patients

Rape Crisis (www.rapecrisis.co.uk)

Provides information to help people who have experienced sexual violence, friends, and family access services

Metropolitan police (www.met.police.uk/sapphire.advice.htm)

Advice for people who have been raped

Victim Support (www.victimsupport.org)

Independent charity helping people cope with the effects of crime, providing free and confidential support and information to help people deal with their experience

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Competing interests: JW received funding from the Home Office to develop the care and evidence training package, available at www.careandevidence.org.

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CORRECTIONS AND CLARIFICATIONS

Minerva

We twice inserted an incorrect and confusing word during the technical editing of a Minerva item about the first Northwick Park heart study (*BMJ* 2007;334:702, 31 Mar, doi: 10.1136/bmj.39164.781389.791). The study, reported in the third Minerva item, looked at factor VIIc, which is not factor VII "anticoagulant activity," as we said, but the opposite—the procoagulant activity of factor VII. And the data show that the greater the procoagulant activity of factor VII at recruitment, the greater the risk of coronary death in both sexes.

Intermittent claudication

Several errors crept into this 10-minute consultation by Roger W Simon and colleagues as a result of an editing omission and some electronic problems (*BMJ* 2007;334:746, 7 Apr, doi: 10.1136/bmj.39036.624306.68). Firstly, in the second paragraph we should have said, "Pain occurring before 200 m reflects Fontaine stage IIb [not Ia] peripheral arterial disease." Secondly, when we posted the authors' web figure on bmj.com, two arrows became corrupted and were not visible: in the second row of boxes, the final text of the two right hand boxes should have included an arrow between "necessary" and "referral" (this has now been corrected). Thirdly, although the first name of the second author, André Simon-Schulthess, was correctly spelt in the printed journal, his first name was misspelt on bmj.com. Finally, we got the addresses wrong for André Simon-Schulthess and the third author (Beatrice R Amann-Vesti) both in print and in the pdf (although they are correct in the full text version on bmj.com). Their addresses are, respectively, Eisfeldstrasse 22, CH-8050 Zurich, and Angiology Division, Department of Internal Medicine, University Hospital Zürich, CH-8091 Zurich.

Parenting intervention in Sure Start services for children at risk of developing conduct disorder: pragmatic randomised controlled trial

In this paper by Judy Hutchings and colleagues there was a mix-up over the order of the authors (*BMJ* 2007;334:678-82, 31 Mar, doi: 10.1136/bmj.39126.620799.55). The order was correct in the online first pdf (Hutchings, Bywater, Daley, Gardner, Whitaker, Jones, Eames, and Edwards) but incorrect in the html web page and in the abridged versions (in the printed journal and posted on the web). The errors were the result of glitches in the electronic translation process.

Obituary: William Ian McDonald

We should have acknowledged that this obituary by Caroline Richmond (*BMJ* 2007;334:160, 20 Jan, doi: 10.1136/bmj.39097.535093.FA) drew heavily from the obituary by Alastair Compston published in the *Independent* on 19 December 2006 (http://news.independent.co.uk/people/obituaries/article2086705.ece).